Implications of U.S. and Global Organic Dairy, Livestock and Poultry Production for International Trade

Foreign Agricultural Service (FAS) and industry reports describe the U.S. and international organic agricultural sectors as nascent, yet vibrant and strengthening, as production and international trade of organic agricultural products becomes more prevalent in the global market. In an effort to be forward-looking and anticipate upcoming changes and possible implications for FAS analysis and marketing efforts, the Dairy, Livestock and Poultry Division of FAS has undertaken a comprehensive study on organic dairy, livestock, and poultry production. Although official data on organic agricultural production, consumption and trade is extremely limited, the analysis put forth by DLP represents a summary of the most up-to-date information available.

Market Summary

Recent U.S. organic market value data obtained from the Organic Trade Association and U.S. industry analysis group, *Datamonitor*, and presented in the tables below, indicate an overall growth rate of domestic organic food sales at 20 percent annually. Total organic food sales, valued at $5.4 billion in 1998, are expected to reach $7.7 billion by year-end 2000. Total sales for 2003 are forecast to reach just over $13 billion. *Organic dairy* sales are the fifth fastest growing commodity group, with sales increasing an average of 37 percent annually, and total sales are forecast to reach $2 billion by 2003. *Organic meat and meat products*, including *poultry*, are the sixth fastest growing commodity group, with total sales forecast to reach $617 million by 2003. Organic dairy and meat products are expected to capture 15 and 5 percent of total domestic organic food sales, respectively, by 2003.

Start-up costs, conversion requirements, insufficient organic grain supplies, and the U.S. organic livestock producer's inability to label products as "organic" until 1999, have dampened growth in U.S. organic livestock production relative to organic crop production. As the U.S. organic sector's infrastructure (organic technology, production, and distribution systems) formalizes, market inefficiencies are expected to come into equilibrium. Moreover, as organic foods become more widely accepted, it is expected that demand for livestock products will increase.

U.S. Organic Market Value Forecasts ($ million) 1998-2003

	1998	1999	2000	2001	2002	2003	Ave Growth 1998-2003
Produce	3,486	3,904	4,294	4,638	4,962	5,210	8.4%
Frozen Foods	400	565	813	1,179	1,603	2,101	39.3%
Dairy	424	598	832	1,148	1,538	2,015	36.6%
Bakery & Cereals	201	278	400	553	735	970	36.9%
Ready Meals	145	196	269	381	549	758	39.2%
Chilled Foods	274	329	401	501	572	635	18.3%
Meat & Meat Products	168	218	288	374	475	617	29.8%
Baby Foods	84	117	166	239	321	417	37.7%
Other	112	129	145	163	187	219	14.4%
Soft Drinks	60	75	91	110	130	153	20.4%
Beer & Wine	46	54	60	66	72	77	10.9%
Overall	5,401	6,463	7,760	9,352	11,146	13,172	19.5%

U.S. Organic Market Value Forecasts (% Value) 1998-2003

	1998	1999	2000	2001	2002	2003
Produce	64.5	60.4	55.3	49.6	44.5	39.6
Frozen Foods	7.4	8.7	10.5	12.6	14.4	15.9
Dairy	7.9	9.3	10.7	12.3	13.8	15.3
Bakery & Cereals	3.7	4.3	5.2	5.9	6.6	7.4
Ready Meals	2.7	3.0	3.5	4.1	4.9	5.8
Chilled Foods	5.1	5.1	5.2	5.4	5.1	4.8
Meat & Meat Products	3.1	3.4	3.7	4.0	4.3	4.7
Baby Foods	1.6	1.8	2.1	2.6	2.9	3.2
Other	2.1	2.0	1.9	1.7	1.7	1.7
Soft Drinks	1.1	1.2	1.2	1.2	1.2	1.2
Beer & Wine	0.9	0.8	0.8	0.7	0.6	0.6
Overall	100	100	100	100	100	100

Source: *Datamonitor*

The global organic market is estimated to have doubled between 1997 and 2000, with retail sales expected to reach well over $20 billion by the end of 2001 and demand for organic products growing at 10 to 30 percent per year in many markets. Industry analysts expect organic production and trade to escalate to as much as $100 billion in the coming decade, owing the increase to growing public awareness of health and environmental conservation and the public's association of the organic production process with these issues.

Organic agricultural trade is a growing, although relatively undeveloped, sector of the international market. More rapid trade growth has been hindered by yet evolving national organic standards, certification and accreditation programs, and inefficient market infrastructures for organic products in many countries. It is expected that once national standards are more widely established, bi-lateral equivalency agreements will lead to increased trade opportunities. National standards and trading patterns are expected to formalize over the next 1 to 3 years.

Regions having the strongest demand for organic livestock products, namely the United States and the European Union (EU), currently show little third country imports. Some reasons for this are: 1) there is currently little world surplus production of organic livestock products for export, and 2) international trade is hampered by a lack of established trading systems and guidelines. There is some evidence of U.S. exports of organic beef, and some larger U.S. producers of organic dairy have established foreign production facilities, but these activities account for a small part of international trade.

What is Organic?

According to Codex Alimentarius Commission and the Joint FAO/WHO Food Standards Programme, organic agriculture is:

> *...a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity...[it] emphasizes the use of management practices in preference to the use of off-farm inputs...[and], where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials...*

Moreover,

> *The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants and people...[where] systems are based on specific and precise standards of production which aim at achieving optimal agroecosystems which are socially, ecologically and economically sustainable.*

Organic *livestock* production, as part of an organic agroecosystem, aims to fully integrate animal and crop production, bringing forth a symbiotic relationship of recyclable and renewable resources within the farm system. As such, organic producers must take into consideration many factors affecting the overall balance of the system, in addition to the process by which livestock is produced and raised.

Certification of organic products is basically the certification of a production system, as opposed to the certification of a product. For a product to be certified organic, all operators in the product chain, including farmers, processors, manufacturers, exporters, importers, wholesalers, and retailers must be certified organic. It is possible that different certifiers certify different operators in the production chain.

What is "Organic"?

Organic agriculture is often described as a "holistic production management system" which emphasizes the use of cultural, biological, and mechanical management practices over off-farm, synthetic inputs to optimize the health and productivity of ecologically sustainable agroecosystems (interdependent components of soil life, plants, animals, and people). Similarly**,** organic livestock production aims to fully integrate animal and crop production, bringing forth a symbiotic relationship of recyclable and renewable resources within the organic farm system.

It should be noted that certification of organic products is the certification of a *production system*, as opposed to the certification of a *product*. For a product to be certified organic, all operators in the product chain, including farmers, processors, manufacturers, exporters, importers, wholesalers, and retailers must be certified organic.

I. Overview of U.S. Organic Industry & Organic Livestock Production

Industry sources estimate the annual growth rate of U.S. organic agricultural production at more than 20 percent annually since 1992, out-pacing most other domestic agricultural sectors. Nonetheless, organic crop and livestock production together still account for little more than 1 percent of total U.S. production. High barriers to entry, such as large start-up and managerial costs; smaller, profit-limiting economies of scale; and risks of shifting away from conventional farming, have prevented more widespread adoption of organic farming. Despite these barriers, the future of U.S. organic production looks bright.

The Organic Foods Production Act (OPFA) was adopted as part of the 1990 Farm Bill and laid the foundation for the creation of the National Organic Program (NOP), which will be implemented by the USDA Agricultural Marketing Service (AMS). OPFA has three purposes: to establish national standards governing the marketing of organically produced products; to assure consumers that organically produced foods meet consistent standards; and to facilitate interstate commerce in fresh and processed food that is organically produced. Within the context of OFPA, AMS drafted and put forth for public comment a set of proposed organic regulations in December 1997. Having received a record number of responses during the first public comment period, AMS revised the regulations and recently re-issued them for a second public comment period, which closed on June 12, 2000. AMS intends to finalize the proposed regulations by the end of the 2000 calendar year.

According to a recent USDA Economic Research Service study, certified organic production in the United States more than doubled from 1992 to 1997, bringing total land converted to organic production systems to more than 1.3 million acres in 49 states. Approximately two-thirds of this

farmland was dedicated to growing crops, with the remaining amount used as pasture and rangeland. Nearly half of the states with organic agriculture reported having certified organic livestock production, with eggs and dairy representing by far the fastest growing sectors. As shown in the table below, over the 1992-1997 period production of organic laying hens increased to over half a million birds (1,123 percent) while the number of certified organic milk cows increased by nearly fivefold.

Organic meat and poultry production has not experienced the same growth rates as dairy and eggs and, in fact, declined over the 1992-1997 period. This is partly due to the industry's inability to label meat and poultry as organic until February 1999, when a provisional label was approved by USDA/Food Safety and Inspection Service. Food crops and non-meat animal foods (eggs and dairy products) are regulated by the Food and Drug Administration and have been allowed to carry an organic label throughout the 1990's. Besides restrictions on labeling, growth in organic meat production has also been slowed by a shortage of organic feed grains and growing demand for these grains in human and livestock consumption.

U.S. Certified Organic Farmland Acreage and Livestock, 1992-1997

	1992	1993	1994	1995	1996	1997	1992-97
Acres							% Change
Cropland	403,400	464,800	556,750	638,500	n/a	850,173	111
Pasture/ Range	532,050	490,850	434,703	279,394	n/a	496,385	(7)
Total	935,450	955,650	991,453	917,894	n/a	1,346,558	44
Animals							% Change
Beef cows	6,796	9,222	3,300	n/a	n/a	4,429	(35)
Milk cows	2,265	2,846	6,100	n/a	n/a	12,897	469
Hogs	1,365	1,499	2,100	n/a	n/a	482	(65)
Sheep	1,221	1,186	1,600	n/a	n/a	705	(42)
Layers	43,981	20,625	47,700	n/a	n/a	537,826	1,123
Broilers	17,382	26,331	110,500	n/a	n/a	38,285	120
Other						226,105	

Source: 1992-94, Agricultural Marketing service, USDA; 1995(including revisions of farmland1992-94), Agrisystems International; 1997, Economic Research Service. Numbers may not add due to rounding.

In 1997, U.S. production of organic eggs was concentrated in three main regions, including the west coast, the southeastern coast, and New England. California accounted for 65 percent of all certified organic laying hens, followed by Virginia (12 percent), Pennsylvania (7 percent) and Ohio (6 percent). North Dakota produced nearly 62 percent of U.S. organic poultry, while New Hampshire and Pennsylvania accounted for 15 and 11 percent, respectively. Michigan ranked as

the largest organic beef cattle producer in 1997, while the majority of organic dairy cows were found in the mid-western states of North Dakota, Wisconsin, Minnesota, followed by Pennsylvania and California.

Growth trends in organic livestock production over the 3-year period of 1997 to 2000 are difficult to measure as few hard statistics are available. Anecdotal evidence and discussions with industry representatives indicate that growth in organic poultry and egg production has remained consistent with the regions described above. Organic beef production has strengthened in Colorado, while organic dairy production has increased in California and Maryland.

Certified Organic Livestock, by State, 1997

	Cows, Pigs, and Sheep					Chickens and Other Poultry					Other
State	Beef cows	Milk cows	Hogs	Sheep	Total	Layer Hens	Broil-ers	Turkeys	Other	Total	1/
CA	400	1,089			1,489	350,000				350,000	
CT	78	8	12	81	185	57				57	
HI											4
IL		90			90						
IN						15,000				15,000	
KS						15,000				15,000	
ME	42	1,020	20	169	1,251	348	900			1,248	
MD		504			504						
MI	1,800	160		9	1,969	40				40	
MN	39	2,425			2,464	8,006	1,000		85	9,091	
MO	842	100			942						
NH									40,000	40,000	
NJ	25	2		15	42	25				25	
NM	300				300		2,500	750		3,250	
ND	189	3,386		51	3,626				161,304	161,304	
NC						9,700			20,000	29,700	
OH						30,000				30,000	
PA	100	1,256		200	1,556	37,300	29,000			66,300	
SD	430			180	610						
VA						62,400				62,400	
WA	100	342	450		892	9,360	1,385			10,745	
WI	84	2,509			2,593	590	3,500			4,090	
Total	4,429	12,897	482	705	18,513	537,826	38,285	750	221,389	798,250	4

1/ Includes goats and other animal specialties.

Source: Economic Research Service, USDA

While the annual growth rate of the U.S. organic agricultural production continues to out-pace most other domestic agricultural sectors, organic crop and livestock production together account for less than 1 percent of total U.S. production. High barriers to entry, such as large managerial costs, risks of shifting away from conventional farming, limited awareness of organic farming systems, lack of marketing and infrastructure, inability to capture market economies, insufficient numbers of processors and distributors, and limited access to capital, have prevented more widespread adoption of organic farming. These barriers to entry are typical of nascent industries and will most likely be overcome as the organic sector secures its place within the market.

U.S. Organic Livestock Production Regulations

Organic livestock production aims to fully integrate animal and crop production, bringing forth a symbiotic relationship of recyclable and renewable resources within the farm system. Livestock production is seen as a component of a wider, more inclusive organic production system. Organic producers must take into consideration many factors effecting the overall balance of the farm system, in addition to the process by which livestock is produced and raised. These factors include, but are not limited to: minimizing environmental impact, animal waste and soil nutrient management, organic feed requirements (including limited use of feed additives), accommodating natural behavioral trends and needs of livestock animals, and transition regulations from conventional to organic livestock production.

According to the regulations outlined in Subpart-C of the proposed rule of the National Organic Program, organic livestock production must maintain or improve the natural resources of the farm system, including soil and water quality. Producers must keep livestock and manage animal waste in such a way that supports instinctive, natural living conditions of the animal, yet does not contribute to contamination of soil or water with excessive nutrients, heavy metals, or pathogenic organisms, and optimizes nutrient recycling. Proposed manure composting techniques adhere to Natural Resource Conservation Service composting standards. However, these standards may be revised before finalization of the standards to include more stringent time and temperature requirements to minimize the presence of human pathogens.

Livestock living conditions must accommodate the health and natural behavior of the animal, providing access to shade, shelter, exercise areas, fresh air, and direct sunlight suitable to the animal’s stage of production, or environmental conditions, while complying with the other organic production regulations. For example, organic pasture is required for ruminant animals, while bedding, if consumed by the animal, must comply with organic feed requirements. While confinement of animals is not routinely allowed, it is permitted in temporary situations, such as: inclement weather; the animal's stage of production; conditions under which the health, safety, or well-being of the animal could be jeopardized; or risk to soil or water quality.

The proposed organic standards require that any livestock or edible livestock product to be sold, labeled, or represented as organic *must be maintained under continuous organic management from birth or hatching until brought to market*. However, there are four exceptions:

- **Poultry** or edible poultry products must be from animals that have been under continuous organic management beginning *no later than the second day of life*.

- **Milk** or milk products must be from animals that have been under continuous organic management beginning *no later than 1 year prior to the production* of such products.

- **A non-edible livestock product,** such as wool, must be derived from an animal that has been under continuous organic management beginning *no later than 1 year prior to the harvest* of the nonedible product.

- **Breeding stock** may be brought from a non-organic operation into an organic operation at any time, provided that, if such livestock are gestating and the offspring are to be organically raised from birth, the breeder stock must be brought into the organic operation *prior to the last third of pregnancy*.

The producer of an organic livestock operation must also maintain records sufficient to preserve the identity of all organically managed livestock and all edible and non-edible organic livestock products produced.

Organic livestock feed, including pasture and forage, must be produced organically, and health care treatments must fall within the purview of accepted organic practices. The National Organic Standards Board (NOSB - an advisory board to the USDA National Organic Program) has recommended a list of synthetic substances, known as the *National List*, allowed in organic livestock production, yet frequently with specific use restrictions. Nearly all synthetic animal drugs and hormones used to promote growth, control parasites, supplement feed and/or act as feed additives in amounts above those needed for adequate growth and health maintenance of livestock at its specific stage of life are prohibited in organic production. Plastic pellets for roughage, formulas containing urea or manure, or additives containing animal by-products are also prohibited. All medical treatments must fall within the purview of the *National List* and organic practices to maintain organic status. When preventive practices and veterinary biologics on the list of NOSB accepted products are inadequate to prevent sickness, the producer must administer conventional medications. However, livestock that are treated with prohibited materials must be clearly identified and can not be sold, labeled, or represented as organic.

Organic Livestock Production...Possible Challenges to the Producer

Organic livestock producers face a unique set of challenges relative to organic crop producers. Given a relatively small, or nearly non-existent, organic breeding stock base, the opportunity costs of transitioning from conventional to organic livestock production may likely be high as the proposed regulations require life-long organic status of organic livestock animals.

Furthermore, the prohibition of synthetic feed additives, growth promoters, and other pharmaceuticals will necessitate less intensive livestock production and a more vigilant production technique based on preventative measures and early intervention in cases of sickness within herds. Contrary to conventional systems, treatment of animals with conventional veterinarian medicine will, in most cases, result in the removal of that animal from organic production, thereby foregoing marketplace premiums yet still reaping the higher costs associated with organic production.

Animal waste management in organic agriculture presents a complex set of issues for organic livestock producers. Drafters of the proposed rule want to ensure safety and minimize the presence of pathogens in the use and application of raw manure in organic crop production. The NOSB is recommending both time and heat requirements for proper composting of raw manure before it is applied to agricultural crops. These standards will be based on scientific studies to ensure integrity of the proposed rule. Time requirements could very well differ for above ground crops (requiring less composting time) and crops that are either grown or come into contact with the soil (requiring more time).

Stringent animal manure composting and application regulations could have a dramatic impact on the profitability of organic livestock production compared to conventional livestock production. Increased production costs will result from higher storage costs for longer manure holding periods and lower production efficiency due to the lower animal density/land ratio requirement (fewer animals per acre of tillable land for manure disposal). Currently there are no standards for raw manure usage in conventional agriculture. Therefore, production standards for raw and composted manure in organic agricultural production could have far-reaching effects on conventional agricultural production as it raises the question of manure safety and adequate elimination of human pathogens.

Due to the length of the transition period and the organic feed requirement, industry representatives have raised concerns of increased costs of production and opportunity costs. These requirements may create barriers to entry for farmers who have limited access to investment capital and less financial flexibility to accommodate herd conversion requirements. However, proponents of stringent transition requirements countered that relaxing livestock transition requirements (relative to more stringent crop transition regulations) would compromise the philosophic integrity of organic production systems.

II. Overview of Global Organic Agricultural Production

Industry sources indicate that global organic production has increased 20 percent annually over the past 10 years. In terms of total acreage of land dedicated to certified organic production, Australia, the EU and the United States are, respectively, the largest global organic producers. Australia has nearly 15 million acres of land under certified organic agricultural production. FAS post reports estimate total EU organic acreage at roughly 6.7 million acres. And, according to a USDA Economic Research Service study, certified organic production in the United States encompassed more than 1.3 million acres in 1997. In terms of *total value* of organic product produced, the United States and the EU surpass Australia as the largest producers.

Recent FAS overseas posts reports suggest that Canada and Mexico are gaining importance as mid-sized global organic producers. Canada's organic industry is reportedly expanding at rates relative to growth in the U.S. and EU's organic sectors, with Canada's organic food industry at C$1.0 billion in 1997. Organic production in Canada reportedly increased 14 percent between 1997 and 1995. In Mexico, land dedicated to organic products has increased by more than 140 percent from 1996 to 1998, to a total of 136,000 acres. Although the production of organic products in Mexico is still relatively small, its economic impact is significant, having created $70 million in exports in 1999.

According to a recent study done by the International Trade Center, organic production is beginning to take hold in many developing countries. Most countries in Latin America and the Caribbean have an organic agricultural sector, though at varying levels of development. The largest and most advanced include Argentina and Brazil, and, to a lesser extent, Bolivia, the Dominican Republic and Guatemala. Africa, Egypt and Madagascar are currently the most prominent exporters, having established organic farming and trade associations with export trade to the EU. In addition, both the Republic of Korea and Sri Lanka are reportedly producers of organic products, while India, Israel, and Turkey appear to have substantial export potential. While China's Green Food Project supports "contamination-free, safe, high quality and nutritious food certified by the China Green Food Development Center," these products are not considered to be strictly organic by most western standards.

Organic Dairy, Livestock, and Poultry Production

Among the global organic industry's top producers, organic dairy and poultry production have shown stronger growth rates than organic beef and pork production. Some reasons for this trend may include varying national and private requirements for transitioning from conventional to organic livestock production, competition for organic grain between consumers and livestock, and a slower evolution of organic production standards for beef and pork than for organic crop production.

In addition, some studies have indicated that consumer demand for organic food product has been stronger among population groups favoring less animal protein dietary intake. Therefore, it is possible that stronger demand for crop products has stimulated production of these commodities over dairy, livestock, and poultry products. However, additional studies have shown that, in markets where demand for organic food has become more widely accepted, demand and production of organic livestock products has also grown. Markets reflecting this trend include the United States and the EU, and, to a lesser extent, Argentina and Brazil. In these markets, demand for organic dairy and eggs has been strongest, followed by poultry, beef, and pork, respectively.

In the United States, more than half of the states with organic agriculture have certified organic livestock production, with eggs and dairy representing by far the fastest growing sectors. Over the 1992-1997 period, production of organic laying hens increased to over half a million birds (1,123 percent), while the number of certified organic milk cows increased by nearly fivefold. United Stated production of organic meat and poultry production has not experienced the same growth rates as dairy and eggs and, in fact, declined over the 1992-1997 period. This is partly

due to the industry's inability to label meat and poultry as organic until February 1999, when a provisional label was approved by USDA/Food Safety and Inspection Service. Growth in organic meat production has also been slowed by a shortage of organic feed grains and growing demand for these grains in human consumption. While the annual growth rate of the U.S. organic agricultural production continues to out-pace most other domestic agricultural sectors, organic crop and livestock production together account for less than 1 percent of total U.S. production.

In the EU, Austria and Denmark are large producers of organic dairy and livestock products. While most Austrian organic farmers are vegetable and grain producers, organic livestock and dairy production is an integral component of that country's organic sector. Nearly one third of Austrian organic production is exported, particularly to Germany, the United Kingdom and Sweden, with the main products for export being cheese and meat. While most organic milk is processed in conventional Austrian dairies (separated from conventional milk lots), one exclusively organic milk dairy is in operation in Upper Austria. Reportedly, in November 1999, a meat processing plant designed to receive only organically raised cattle was also established. There is some indication that organic hog production has begun in Austria and that many of these farmers produce under contract at set prices.

Current estimates place Danish organic production at just under 4 percent of total agricultural production, with an estimated 20 percent of Danish milk production produced organically. Austria's major organic products are beef and milk; in fact, there is an oversupply of the latter--only 40 percent of organic milk is sold as organic, and the rest is marketed as conventional. Danish demand for organic pork and chicken reportedly exceeds supply.

French sales of organic dairy and meat and poultry products are expected to reach $133 million and $42 million, respectively (wholesale prices), by 2003. Dairy is one of the fastest growing segments of the French organic food industry, with many of the leading conventional dairies investing in organic milk production. The French Organic Federation (FNAB) estimates that this market segment will have an annual growth rate of 23 percent within 4 years. Rising organic milk production has increased the range of processed value-added organic milk and dairy products. An increasing variety of organic cheeses, butter, yogurts, and fromages frais is widely available in most retail outlets, with some supermarkets selling their own label dairy products. French production of organic meat and poultry is also growing rapidly. According to Bio Convergence, the French Professional Association for Organic Foods, demand is out-stripping supply, and retailers are often out of stock. In 1998, organic dairy production represented 8 percent of total French organic production, while meat and poultry accounted for 3 percent. France reportedly exports 17 percent of its organic agricultural production, with most exports of dairy, meat, and poultry destined for neighboring EU countries; no imports of these commodities are reported.

In Argentina, 512,770 acres are dedicated to organic livestock production, the majority of which is organic beef cattle. Of the total 268 tons of organic beef produced in 1998, roughly 80 percent was exported (the majority of which was shipped to the EU). According to FAS Argentina, demand for dairy and poultry products is also strong, with 1998 consumption of milk, cheese, poultry, and eggs amounting to 1.5 million ltrs, 4,000 kg, 120,000 kg, and 7,000 dz, respectively. These amounts represent an increase of between 40 and 60 percent over 1997 levels for milk and

poultry.

Organic production in Brazil is estimated to be increasing at roughly 10 percent per year. While little organic beef or pork production has been identified, organic poultry, egg, and milk production are growing industries. Organic production of chicken, eggs and milk is reported to have reached 550,000 hd, 17,000 dz, and 1,650 ltrs, respectively, by the end of 1999. None of these products are exported.

Global Consumption of Organic Food

The table below summarizes approximate consumption for individual countries. As domestic consumption figures for all countries are not available, annual retail sales are used to capture total domestic demand for organic food products. Industry analysts forecast that demand in many markets will continue to grow at 10 to 30 percent per year, with the international organic market expected to grow to a volume of $100 billion in the next 10 years.

The Center for European Agricultural Studies (CEAS) Consultants estimates that the size of the global organic market doubled between 1997 and 2000, with retail sales expected to reach well over $20 billion by the end of 2001. In absolute terms, the United States is the largest consumer of organic products, closely followed by the EU. In 1997, retail sales of organic products in the United States amounted to roughly $4.5 billion and slightly less in the EU. Retail sales of organic products in the United States and the EU are expected to reach $47 and $58 billion, respectively, by 2006. On average, consumption of organic food products represents between 1 and 2 percent of total domestic consumption in both the United States and the EU.

Germany, the largest consumer of organic products among the EU member states, is expected to have retails sales of $2.5 billion by the end of 2000, increasing the percentage of organic retail sales of all food sales from 1.2 in 1997 to 1.75 percent. In Austria and Denmark, organic products account for 2-3 percent of the domestic food market, slightly higher than the EU average of 1.8 percent. In Denmark, annual retail sales of organic food and beverages are estimated to range from $300 to $380 million annually, or about 3 percent of the total retail food market in 1999. In certain product categories, such as milk, the organic market share is reported to be much higher. Some analysts predict that organic milk will account for half of total Danish milk consumption within the next few years.

Consumption of Organic Food Products for Selected Countries						
Market	1997 Retail Sales (Million $)	1997 % of Total Food Sales	% Imports of Total Organic Sales	% Expected Annual Growth	Forecast 2000 Retail Sales (Million $)	Forecast 2000 % of Total Food Sales
EU						
Austria	225	2	30	10-15	400	3.5
Belgium	75	1	50	15-20	130	1.5
Denmark	300	2.5	25	30-40	600	4.5
France	720	0.5	10	20-25	1,250	1
Germany	1,800	1.2	60	10-15	2,500	1.75
Netherlands	350	1.5	60	15-20	600	1.75
Sweden	110	0.6	30	30-40	400	2
Switzerland	350	2.0	na	20-30	700	4
U.K.	450	0.4	70	25-35	900	1
Italy	750	0.6	na	20	1,100	1
Australia	53*	0.5	na	30	216	1.75
Canada	674*	1	80	15-25	843	1.5
China	1,200*	6 1/	0	na	na	na
U.S.A.	4,200	1.25	na	20	10,000	2
Japan	1,000	<1	1		2,500	1
Total	10,658				22,319	

Based on data from: *Implications of Organic Certification for Market structure and Trade*, Luanne Lohr. Dept. of Agricultural and Applied Economics, University of Georgia, 1998; and *Organic Food and Beverages: World Supply and Major European Markets*, International Trade Center UNCTAD/WTO, Geneva, 1999.

1/ In this country, organic includes "low-chemical." Based on production, not retail sales.
* Australia=1996 retail sales, Canada=1999 retail sales, China=1995 retail sales 1/.

average of 1.8 percent. In Denmark, annual retail sales of organic food and beverages are estimated to range from $300 to $380 million annually, or about 3 percent of the total retail food market in 1999. In certain product categories, such as milk, the organic market share is reported to be much higher. Some analysts predict that organic milk will account for half of total Danish milk consumption within the next few years.

Approximately 54 percent of Austrian consumers buy organic foods at least occasionally. The most popular organic products are fruits and vegetables, milk and dairy products, and meat and sausages. Approximately 80 percent of organic purchases are made through supermarkets, but often fruits and vegetables and meat and sausages are purchased directly from the farm. Currently, about two-thirds of Austria's organic output is sold domestically, with the remaining third exported, mainly to Germany, Great Britain, and Sweden. Major exports consist of meat and dairy products, particularly cheese.

Although organic food accounts for only 1 to 1.5 percent of the market, Swedish demand for organic food is growing at the rate of 25 to 30 percent per year. Product categories with the highest share sold as organic include vegetables, grain products, milk, and baby food, but growth is reported in all areas. Such is the demand for organic products in Sweden that reportedly 27 percent of the municipalities have begun to serve organic foods in schools and hospitals, and another 33 percent plan to do so. In Sweden, McDonald's restaurants have begun to serve organic milk and coffee. The chain also buys some organic meat, but the supply is insufficient to meet demand.

International Trade and Organic Certification and Accreditation

Increased consumption of organic foods has resulted in a budding international organic market. However, lack of established trade guidelines and global organic standards has, to a certain extent, thwarted rapid growth in trade. It is expected that, as these guidelines formalize and global demand for organic product increases, international trade will grow.

Organic certification and accreditation are increasingly important aspects in international production and trade of organic products. There is, at present, no regulation on organic standards applicable worldwide. However, the World Trade Organization and the global trading community are increasingly relying on the Codex Alimentarius (Codex) and the International Organization of Standardization (ISO) to provide the basis for international organic production principles, as well as verification of production systems (i.e., certification and accreditation). Together, the guidelines outlined by these organizations provide a venue for international dialogue, and a basis for a common understanding, on what the term “organic” implies. The International Organization for Standardization (ISO), established in 1947, is a worldwide federation of national standards for nearly 130 countries.

The most important guide for organic certification is ISO Guide 65:1996, *General Requirements for Bodies Operating Product Certification Systems*, which establishes basic operating principles for certification bodies. There is no guide which specifically addresses certification of production methods. Certification ensures that organic products are produced, processed, and packaged according to organic production regulations or guidelines which usually include an assessment of the product process as to minimize environmental impacts (specifically, soil and water quality). Certification also ensures consumers, producers, and traders against fraudulent or misleading labeling of non-organic products by providing transparency as information on certified producing organizations and their products is normally made public.

The accreditation process, conducted by an independent accreditation body, evaluates a certifier’s inspection and certification procedures, as well as that organization’s ability to remain free from vested interests. There is no international regulation on who may or may not carry out accreditation. However, several countries have designed official accreditation and certification bodies in addition to the many independent organizations worldwide. As in the case of ISO Guide 65:1996 and certification principles, ISO Guide 61:1996, *General Requirements for Assessment and Accreditation of Certification/ Registration Bodies*, defines guidelines for accreditation bodies.

The most recent Codex Alimentarius meeting on organics was held in Ottawa, Canada, on May 9-12, 2000. One of the items discussed was Codex guidelines for organic livestock and livestock products, as crop guidelines have more or less been established. Given that the United States and the EU are the most influential Codex members and the largest producers of organic agriculture, the session revolved around ironing out differences between the United States and the EU organic livestock draft proposals. A key provision in the livestock standard was to allow countries to derogate from key provisions when health or safety reasons dictate (e.g., in Japan, Newcastle vaccine would be allowed even though it is the product of genetic engineering because it is necessary to protect human health), and to have higher standards than agreed to in Codex only where absolutely necessary, with time frames for achieving compliance with national standards established by local competent authorities.

III. Organics in FAS

A significant and growing interest in organically produced products exists among many key U.S. trading partners. This is evidenced by a strengthening presence of organic products in trade shows and the international market. Not surprisingly, an increasing number of trade inquiries from overseas relate to information about, or request for, U.S. suppliers. Because organically produced products typically sell at a premium relative to their conventional counterparts, this sector is particularly important in the high value, value-added export industry.

FAS' Horticultural and Tropical Products Division (HTP) has been designated to act as a central coordinating and information point to handle inquiries and promotional assistance for all organic commodities. Although HTP was chosen because many organically produced products are in the horticultural sector, HTP has established working relationships with designated Organics Contact Persons in several commodity divisions. This arrangement ensures that expertise on other commodities is brought in as necessary.

State/Regional Trading Groups

The State/Regional Trade Groups (STRG's) have been active for a number of years in promoting organics overseas using Market Access Program (MAP) funds. In 1994, the Western U.S.A. Trade Association sponsored the first U.S. trade mission of organic suppliers to Japan. Since then, these missions have been held annually. Missions to Europe were added in 1999 and 2000, with the most recent Europe mission having occurred in February 2000. SRTG's also have become involved in organic trade missions to such an extent that each region has a designated organics coordinator.

To compliment their overseas missions, the SRTG's also launched the National Organic Initiative in 1999. The purpose is to encourage and assist in the ongoing development of export markets for the U.S. organic and natural foods industry. National Organic Initiative projects include:

1) *Organic & Natural Food News,* an email newsletter for U.S. exporters featuring trade leads, announcements and other news items of interest,

2) an International Partner list server program to provide updates on the U.S. organic industry to international customers.

The AgExport Services Division of USDA provides oversight of all SRTG organics activities. The SRTGs have budgeted a total of $125,000 of their MAP allocations for organic activities in Europe, and in Japan and Taiwan (Western U.S.A. Trade Association only) for their 2000 MAP marketing year, ending September 30, 2001. While this sum amounts to less than 1 percent of the SRTGs' overall MAP allocation, it does not reflect their matching fund obligations under MAP or other MAP-funded activities organic companies take part in throughout the year.

Organics and the Unified Export Strategy

The Organic Trade Association (OTA) is a business association with a 1,000+ membership representing all sectors of the North American organic industry--producers, processors, certifiers, importers, exporters, retailers, researchers, and others engaged in producing and marketing organic products. OTA's mission is to encourage global sustainability through promoting the growth of diverse organic trade and protecting the integrity of organic standards.

Under FAS' Unified Export Strategy program, OTA is the only cooperator representing organic products. Contrary to the traditional "cooperator" definition, where only one or a limited commodity group is represented, OTA represents all commodities being produced organically. The binding factor, or distinguishing commodity characteristic, for OTA is the organic production process.

OTA received FAS funding as a cooperator for the first time in 1999. Oversight was provided by HTP, and a total of $75,230 in MAP funds was allocated. With this amount, OTA undertook two activities--publication of an organic export directory of U.S. suppliers in English, Japanese, and German; and basic market research.

The English-version export directory listed about 200 U.S. companies offering a wide variety of organic products. The directory made its debut in February at BIOFACH 2000, a major organics show held in Germany, and in the spring, copies were sent to most U.S. Agricultural Trade Offices (ATO) and key U.S. agricultural affairs offices overseas. Additional copies are distributed at trade shows attended by OTA. ATO Hamburg and Agricultural Affairs and ATO Tokyo, respectively, have been asked to review samples of the translations before publication of the German and Japanese directories.

CONCLUSION

FAS overseas post and industry reports indicate a nascent, yet vibrant and strengthening, international organic industry. Moreover, given apparent increases in consumer interest in health and the environment, there is a strong likelihood of continued growth in demand over the coming decade. Most consumers of organic foodstuffs perceive these products to offer specific health benefits and associate the organic process with environmental conservation.

While clearly on its way to becoming a cogent trade sector, international trade of organic products is still relatively undeveloped as many national organic standards, certification, and accreditation programs are yet evolving. However, as the international organic industry moves closer to formalizing its infrastructure and trade patterns, these programs will gain more importance in determining the future size and shape of the global organic industry.

Export opportunities for organic agricultural producers are expected to increase over the next 5 years. According to FAS reports, likely markets for third country exports include Japan, Korea and Canada. Although the EU is a major consumer of organic agriculture, with consumption expected to out-pace the United States by 2010, differences in organic production standards may make it difficult for U.S. exporters to access this market. However, considering that bi-lateral equivalency discussions have yet to take place, and will not take place until the U.S. proposed rule becomes final (expected by year-end 2000), the future of international organic trade for U.S. exporters is yet to be established.

Dairy, Livestock and Poultry Division
Foreign Agricultural Service
U.S. Department of Agriculture
September 2000